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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/271,008	03/17/1999	MOHAN V. KALKUNTE	82771.P270C3	3398

8791 7590 05/27/2004

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EXAMINER	
DUONG, FRANK	

ART UNIT	PAPER NUMBER
2666	17

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/271,008	KALKUNTE ET AL.	
	Examiner	Art Unit	
	Frank Duong	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is a response to the communication dated 5/3/04. Claims 1-24 are pending in the application.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 09/271,011. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter of claims 1-20 of the instant application encompasses the claimed invention of claims 1-20 of the above copending patent application for the same rationales discussed in the Office Action dated 07/30/2002.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that

copending application since the referenced copending application and the instant application are claiming common subject matter. Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 09/131,141. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter of claims 1-20 of the instant application is common and encompasses the claimed invention of claims 1-22 of the above copending patent application.

Evidence can be, explicitly or obviously, found by comparing the independent claims of the instant application against the independent claims of the above copending patent application.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter. Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Simmons et al. (USP 6,192,028) (hereinafter "Simmons").

Regarding **claim 21**, in according to Figs. 1-5 and the description at col. 4, line 19 to col. 11, line 64, Simmons discloses an apparatus (10) comprising:

a multi-link trunk (100Mb/s and 10Mb/s) including a high-speed link (100Mb/s) and a low-speed link (10Mb/s);

a network interface (12) including

a first pointer value buffer associated with the high-speed link *(see Fig. 3; 64 and 66 associated with 100Mb/s)*;

a second pointer value buffer associated with the low-speed link (*see Fig. 3; 64 and 66 associated with 10Mb/s*),

a receive buffer (34) from which packets of data are promoted in an assigned order based on pointer values with priority given to pointer values in the first pointer value buffer (*see Fig. 3, col. 7, line 21 to col. 10, line 12*).

Regarding **claim 22**, in addition to features called for in base claim 21 (*see rationales pertaining the rejection of base claim 21 discussed above*), the claim further calls for a multiplexer (22) having an output coupled to the first pointer value buffer, the second pointer value buffer and the receive buffer (34); and a plurality of media access controllers coupled to inputs of the multiplexer (22) (*see Figs. 2A-2B, elements 64 and 66 associated to 100Mb/s and 10Mb/s, respectively and 34; and the description at col. 6, line 5 to col. 7, line 20*).

Regarding **claim 23**, in addition to features called for in base claim 22 (*see rationales pertaining the rejection of base claim 22 discussed above*), the claim further calls for the network interface (12) further includes a plurality of physical links (Fig. 1, 18) each coupled to a corresponding media access controller (Fig. 2A-2B, any of MAC 1-2 and 23-26) of the plurality of media access controllers (*Fig. 2A-2B, MACs 1-2 and 23-26*).

Regarding **claim 24**, in addition to features called for in base claim 21 (*see rationales pertaining the rejection of base claim 21 discussed above*), the claim further calls for the receive buffer (34) promotes packets of data associated with a pointer value of the second pointer value buffer only if all frames of data associated with a pointer value of the first pointer value buffer has been promoted (see col. 8, line 34 to col. 10, line 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons in view of Frazier et al. (USP 5,784,559) (hereinafter "Frazier").

Regarding **claim 1**, in according to '028, Figures 2-4, col. 6, line 5 to col. 10, line 12, Simmons discloses a flow control method (corresponding to "method for preserving frame order of a plurality of frames" in a half duplex Ethernet network (Figure 2) (corresponding to "plurality of communication links"), the method comprising, among other things: assigning a pointer value to a corresponding plurality of records in appropriated buffers of a plurality of pointer value buffers associated with the corresponding plurality of virtual links based, at least in part, on a relative order in which data packets are transmitted on each of the links (*note: col. 8, lines 21-43, Simmons discloses rules checker 42 or 68 places the port vector and the corresponding frame pointer into the port vector FIFO 63. Then, the port vector FIFO 63 assigns the frame pointer to the appropriate destination port(s) by placing the frame pointer into the top of the appropriate output queue 67 (corresponding to claimed "based on a relative order in which the data packets are transmitted on each of the links" because the frame pointer is placed into the top of the output queue 67))*, the corresponding pointer value

associated with each respective data packet being used to determine an order according to complete reception of the frame (col. 8, lines 7-12 and lines) in which the respective data packet is promote (*see col. 8, lines 21-43, Simmons discloses the port vector is examined by the port vector FIFO 63 to determine into which particular output queue 67 the frame pointer associated with the port vector should be input. Then, the buffer manager 65 takes the assigned frame pointer from the bottom of the output queue 67, fetches the corresponding data frame in the DMA transaction from the location in the external memory 36 pointed to by the assigned frame pointer for transmission by the corresponding MAC layer*). Note that Simmons, in according to col. 6, lines 50-56, also discloses one of the advantages of using external rule checker 44 is increasing the capacity of the network. Moreover, Simmons, in according to Figure 2A, also shows signal RX_DVB, as known in the Gigabit Ethernet world is Received Data Valid signal, when enable causes MII 28 in the interface 12 to receive data on RXDB.

Simmons fails to explicitly disclose the step of receiving up to a plurality of indications denoting commencement of data packets transmission over the aggregated links. However, the step of receiving up to a plurality of indications denoting commencement of data packets transmission over the aggregated links is well known and discloses by Frazier.

In according to '559, Figures 1, 3C-3D and 6, the abstract and col. 6, lines 6-9, col. 9, line 31 to col. 10, line 24, and col. 13, lines 39-42, Frazier discloses a flow control method in a full duplex Ethernet network comprising, among other steps, the step of receiving up to a plurality of indications denoting commencement of data packets

transmission over the aggregated links (*note: '559, col. 6, lines 6-9, Frazier discloses when RX_DV is asserted on the MII, MAC receive processing logic accepts and process data from the physical layer, and then passes the processed data to the logical link control layer and col. 13, lines 39-42, Frazier discloses the receive carrier sense variable may be derived directly form the MII signal RX_DV, and is used to indicate incoming bits. Thus, the recitation thereat is corresponding to the claimed step of receiving.*)

It would have been obvious to those skilled in the art at the time of the invention was made to implement Frazier's teaching into Simmons' method to arrive the claimed invention with a motivation of providing a flow control mechanism for a full-duplex Ethernet network as well as increasing the network capacity.

Regarding **claim 2**, in addition to features called for in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), the claim further calls for receiving the data packets from each of the plurality of virtual links in a common receive buffer (*see '028, element 34 and the description at col. 6, lines 15-20 and col. 10, lines 13-22*). Thus, Simmons in view of Frazier discloses the claimed invention.

Regarding **claim 3**, in addition to features called for in base claim 2 (*see rationales pertaining the rejection of base claim 2 discussed above*), the claim further calls for reading the received data packet from the common receive buffer (34) based, at least in part, on the pointer value assigned in each of the pointer value buffers ('see '028, col. 8, lines 34-43). Thus, Simmons in view of Frazier discloses the claimed invention.

Regarding **claim 4**, in addition to features called for in base claim 3 (*see rationales pertaining the rejection of base claim 3 discussed above*), the claim further calls for wherein data packets are promoted from the receive buffer with priority given to pointer values in pointer value buffers associated with the virtual links having higher quality of service levels (*see '028, col. 8, lines 21-43 wherein Simmons discloses the port vector FIFO 63 assigns the frame pointer to the destination port by placing the frame pointer into the top of the appropriate output queue 67, queuing the transmission of the data frame. Thus, Simmons discloses data packets are promoted from the receive buffer with priority given to pointer values in pointer value buffers. At col. 10, lines 33-40, Simmons further discloses the base address for the entire memory 34 is programmable. In according to Fig. 1, Simmons shows the integrated multiport switch 12 serves 24 10Mb/s networks stations 14 and 2 100Mb/s networks stations 16 (corresponding to virtual links). Thus, It is obvious to those skilled in the art to associated priority given to pointer values in pointer value buffers with a higher quality of service levels to better server the network station users with the higher quality of service by programming the base addresses in the memory 34*). Thus, Simmons in view of Frazier discloses the claimed invention.

Regarding **claim 5**, in addition to features called for in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), the claim further calls for wherein a plurality of pointer value buffers are used to store pointer values denoting the commencement of transmission of data packets on a corresponding plurality of virtual links supporting a discrete quality of service levels (*see '028, Fig. 7B,*

col. 13, line 29 to col. 14, line 28). Thus, Simmons in view of Frazier discloses the claimed invention.

Regarding **claim 6**, in addition to features called for in base claim 1 (*see rationales pertaining the rejection of base claim 1 discussed above*), the claim further calls for wherein received data packets are promoted in pointer value order with priority given to pointer value buffers associated with the virtual links with higher quality of service characteristics (*see '028, col. 8, lines 21-43 wherein Simmons discloses the port vector FIFO 63 assigns the frame pointer to the destination port by placing the frame pointer into the top of the appropriate output queue 67, queuing the transmission of the data frame. Thus, Simmons discloses received data packets are promoted in pointer value order with priority given to pointer value buffers. At col. 10, lines 33-40, Simmons further discloses the base address for the entire memory 34 is programmable. In according to Fig. 1, Simmons shows the integrated multiport switch 12 serves 24 10Mb/s networks stations 14 and 2 100Mb/s networks stations 16. Thus, It is obvious to those skilled in the art to associated priority given to pointer value order in higher quality of service characteristics to better server the network station users required high quality of service by programming the base addresses in the memory 34*). Thus, Simmons in view of Frazier discloses the claimed invention.

Regarding **claim 7**, it is well known in the Ethernet art that the indication (RX_DV) is an analog indication.

Regarding **claim 8**, see '028, Fig. 2A, RX_DVB or '559, Fig. 5, RX_DV.

Regarding **claim 9**, see '028, Figs. 4-5.

Regarding **claims 10-20**, the claims are rejected by the same rationales applied to claims 1-9.

Response to Arguments

6. Applicant's arguments filed 5/3/04 have been fully considered but they are not persuasive. Applicants' arguments will be addressed hereinbelow in the order in which they appear in the response filed 5/3/04.

In the Remarks of the outstanding response, on page 6, pertaining the double patenting rejection of claims 1-20, Applicants merely mention it.

Applicants are reminded that a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

In the Remarks, also on page 6 continues to page 7, pertaining the rejection under 35 U.S.C. § 103(e) of claims 21-24 as being anticipated by Simmons, Applicants argue "*Simmons do not teach a receive buffer (34) from which data packets are promoted in an assigned order based on pointer values with priority given to pointer values in the first pointer value buffer (64,66) ... The header information does not contain any information regarding the order, priority, or the pointer values*".

In response Examiner respectfully disagrees and asserts the Simmons reference, as clearly pointed out in the Office Action, teaches the disputed, claimed limitations, in light of the claim language. Let's revisit Simmons reference. At col. 7,

lines 47-49, Simmons discloses frames are received by the internal MAC engines 60, 62 or 36, and placed in the corresponding receive FIFO 64. Then, the header of each data frame is provided to rule checker to determine from where the frame packet will be cast (col. 7, lines 51-55). The rule checks, among other steps, use the port vector to assign the frame pointer to at least a destination (col. 8, lines 19-20) (corresponding to "*assigned order based on pointer values*". The rule checker 42 or 68 places the port vector and the corresponding frame pointer into to the port vector FIFO 63 (col. 8, lines 21-23) (corresponding to "priority"), the frame pointer, then, became the assigned frame pointer. As the assigned frame pointer reaches the bottom of the output queue 67, the buffer manager 65 takes the assigned frame pointer and retrieves to corresponding data frame pointed to by the assigned frame pointer and transmits the frame by the corresponding MAC layer (col. 8, lines 34-43). Thus, contradistinction to the Applicants' arguments, Simmons does indeed anticipate the claimed limitations.

On page 7, Applicants also assert "*More importantly, Simmons teaches away from the invention ... random order implies that there is no order*".

In response Examiner respectfully disagrees and finds neither language in the claim to exclude the interpretation of Simmons' "random-based ordering in the decision queue" to anticipate the claimed subject matters nor random order implies that there is no order.

In the Remarks, also on page 7 continues to page 8, pertaining the rejection under 35 U.S.C. § 103(a) of claims 1-20 as being unpatentable over Simmons in view of Frazier, Applicants assert "*Neither Simmons nor Frazier discloses, inherently or*

expressly, or suggest one or more of the following (1) receiving a plurality of indications denoting commencement of data frame transmission as recited in claims 1, 10, 16 and 19; (2) assigning pointer values to corresponding records based on at least in part on a relative order as recited in claims 1, 10, 16 and 19; or (3) the pointer value determining an order according to complete reception of the frame in which the respective data frames are promoted as recited in claims 1, 10, 16 and 19; and/or (4) a receive buffer from which packets of data are promoted in an assigned order based on pointer values with priority given to pointer values in the first pointer value buffer as recited in claims 21 ... Furthermore, Simmons merely discloses determining each receive FIFO individually, not in an aggregated link including a plurality of links".

In response Examiner respectfully disagrees and is content the Office Action has clearly pointed out the claimed limitations corresponding to that taught by the applied references, in light of the claim language. Moreover, claim 21 is not subjected to the rejection under 35 U.S.C. § 103(a) as being anticipated by Simmons in view of Muller. It is rejected under 35 U.S.C. § 102(a) as being anticipated by Simmons. Examiner recognizes that Applicants are their own lexicographer. However, Simmons' Figure 1 does indeed depict a plurality of links (MACs 60 and 62) corresponding to the claimed term "aggregated link". Moreover, should the Applicants further amend the claims to reflect the "aggregated link" is "the logical combining multiple physical links into a logical channel trunk" as widely known in the Gigabit Ethernet community as "Trunking", the idea had already been patented by Sun Microsystems in patent 6,049,528, accompanied Office Action dated July 30, 2002. Moreover, Examiner finds neither

language in the claim to exclude the interpretation of Simmons' "random-based ordering in the decision queue" to anticipate the claimed subject matters nor random order implies that there is no order.

Examiner believes an earnest attempt has been made in addressing all of Applicants' allegations. Due to the response fails to place the application in a better form for allowance and the arguments are not persuasive, the rejection from last Office Action is maintained.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank Duong
Examiner
Art Unit 2666

May 21, 2004